

Yucca glauca / Calamovilfa longifolia Shrub Herbaceous Vegetation

COMMON NAME	Soapweed Yucca / Prairie Sandreed Shrub Herbaceous Vegetation
SYNONYM	Soapweed / Prairie Sandreed Shrub Prairie
PHYSIOGNOMIC CLASS	Herbaceous Vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland with a sparse shrub layer (V.A.7)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (V.A.7.N)
FORMATION	Medium-tall temperate grassland with a sparse xeromorphic (often thorny) shrub layer (V.A.7.N.h)
ALLIANCE	YUCCA GLAUCA SHRUB HERBACEOUS ALLIANCE
CLASSIFICATION CONFIDENCE LEVEL	2
USFWS WETLAND SYSTEM	Terrestrial

RANGE

Badlands National Park

Yucca shrub grasslands occupy sandy ridges and silty clay flats on butte edges within the park and the slopes of scarp canyons along the Cheyenne River breaks northwest of the park. Sandy ridges occur predominantly in the South Unit near the White River, but one prominent sandy ridge is also present on the North Unit.

Globally

This type is found in the northwestern Great Plains, including eastern Wyoming and Montana, and western South Dakota.

ENVIRONMENTAL DESCRIPTION

Badlands National Park

Yucca shrub grasslands occur most commonly as small stands of shrubs near the edge of buttes. These shrublands are also associated with sand hill complexes, where they occupy the lower sandy ridges as the dominant shrub, but also intergrade with sand sagebrush (*Artemisia filifolia*) on sandy slopes and hills.

Globally

Stands dominated by *Stipa comata* are more typically found only along sandstone outcrop ridge tops and a short distance down the adjacent slopes (the *Yucca glauca* / *Stipa comata* association of Thilenius *et al.* 1995). Soils are relatively deep (> 1 m), pure sands, with medium to coarse-textured lower horizons. The substrate is well-drained, but not xeric. Stands with *Calamovilfa longifolia* occur on a broader range of ridge tops and upper slopes (*Yucca glauca* / *Calamovilfa longifolia* association of Thilenius *et al.* 1995).

MOST ABUNDANT SPECIES

Badlands National Park

<u>Stratum</u>	<u>Species</u>
Shrub	<i>Yucca glauca</i>
Herbaceous	<i>Bromus tectorum</i> , <i>Carex filifolia</i> , <i>Sporobolus cryptandrus</i> , <i>Bouteloua gracilis</i>

Globally

<u>Stratum</u>	<u>Species</u>
Short Shrub	<i>Yucca glauca</i>
Graminoid	<i>Bouteloua gracilis</i> , <i>Calamovilfa longifolia</i> , <i>Carex filifolia</i> , <i>Stipa comata</i>

CHARACTERISTIC SPECIES

Badlands National Park

Yucca glauca, *Bouteloua gracilis*, *Sporobolus cryptandrus*, *Calamovilfa longifolia*, *Carex filifolia*

Globally

Bouteloua gracilis, *Calamovilfa longifolia*, *Stipa comata*, *Yucca glauca*

OTHER NOTABLE SPECIES

VEGETATION DESCRIPTION

Badlands National Park

Yucca shrub grasslands have a sparse cover of yucca (*Yucca glauca*) shrubs, typically between 15-25%, but they usually have good cover in the herbaceous stratum. This plant association rarely has other shrubs present; rather, the understory species change relative to soil types. On silty clay to clay soils, threadleaf sedge (*Carex filifolia*) dominates, while on clay soils western wheatgrass (*Pascopyrum smithii*) provides dense understory cover. Sandy ridges dominated by yucca also support prairie sandreed grass (*Calamovilfa longifolia*), sand dropseed (*Sporobolus cryptandrus*), sand bluestem (*Andropogon hallii*), and purple three-awn (*Aristida purpurea*) in abundance.

USGS-NPS Vegetation Mapping Program

Badlands National Park

Globally

Stands contain an open to moderately dense (at least 10% cover), low-shrub layer above a species-rich herbaceous layer. Dominance of the shrub layer by *Yucca glauca* is characteristic (average cover in 6 stands was 9.8%). *Artemisia tridentata* ssp. *wyomingensis* and *Artemisia cana* ssp. *cana* may be present but are sparse and contribute little cover. In the herbaceous layer, *Stipa comata* and *Calamovilfa longifolia* codominate (16% cover and 8% cover, respectively), and *Bouteloua gracilis* and *Carex filifolia* often are present but contribute much less cover than do *Stipa* or *Calamovilfa*. Forbs are common but contribute little cover; *Artemisia frigida* (dwarf shrub-like) has the highest constancy, but no forb is characteristic of the association. Litter covers up to about half of the ground surface, and most of the rest of the ground surface is bare soil.

CONSERVATION RANK G4.

DATABASE CODE CEG002675

MAP UNITS Yucca shrub grasslands are mapped under map class 21 (Soapweed yucca / Prairie sandreed Shrub Grassland) on the Badlands NP vegetation map.

SIMILAR ASSOCIATIONS

COMMENTS

Badlands National Park

The yucca shrub grassland type can occur as very small stands or patches on the landscape, which are difficult to map. This community intergrades and may be co-dominant with sand sagebrush (*Artemisia filifolia*) on higher sand ridges and hillslopes/tops. Several stands were visited during the course of the study, and they appeared quite consistent in vegetation structure and composition. One instance of illegal collection of yucca shrubs, presumably for their home landscape values, was witnessed on Sheep Mountain Table.

Globally

In Badlands National Park, South Dakota vegetation cover varies with soil conditions. Sandy soils have characteristic dominants, but on more silty clay soils, *Carex filifolia* and *Pascopyrum smithii* may dominate.

REFERENCES

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